

*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

Claims 1-59 (Canceled).

60. (New) An apparatus comprising a microfluidic device and at least two disposable containers, the microfluidic device comprising at least one channel, each disposable container comprising a cylinder and a plunger, and the disposable containers fluidly connectable to the microfluidic device.

61. (New) The apparatus of claim 60, wherein the microfluidic device channel is a channel system comprising a plurality of interconnected channels.

62. (New) The apparatus of claim 60, wherein the microfluidic device channel is in fluidic connection with at least one chamber selected from the group consisting of a microfluidic mixing chamber, a microfluidic reaction chamber, a microfluidic detection chamber, a bubble trap chamber, and any combination thereof.

63. (New) The apparatus of claim 60, wherein the microfluidic device channel has a diameter equal to or less than about 2 mm.

64. (New) The apparatus of claim 60, wherein the microfluidic device channel has a diameter equal to or less than about 1.5 mm.

65. (New) The apparatus of claim 60, wherein the microfluidic device includes at least one component selected from the group consisting of a sensor, an electrode, a temperature unit, a sieve, a filter, a membrane, an affinity matrix, a pre-stored substance, a magnet, and any combination thereof.

66. (New) The apparatus of claim 60, wherein the microfluidic device further comprises an inlet opening operatively associated with the channel and a first closure member.

67. (New) The apparatus of claim 66, said microfluidic device further comprising an outlet opening operatively connected to the channel and a second closure member.

68. (New) The apparatus of claim 67, wherein at least one of the first and second closure members comprises a valve.

69. (New) The apparatus of claim 60, further comprising first and second connectors, wherein the first connectors are operatively connected to each disposable container and wherein the second connectors are operatively connected to the microfluidic device, wherein the first connector is operatively engagable with the second connector.

70. (New) The apparatus of claim 69, wherein the microfluidic device includes a recess corresponding to the external diameter of the disposable container, the recess providing guidance of the first connector into a position of engagement with the second connector.

71. (New) The apparatus of claim 70, wherein the microfluidic device is engagable in a fixed position relative to the second connector.

72. (New) The apparatus of claim 71, wherein the disposable container is maintained in the fixed position by a frictional engagement of the disposable container in a microfluidic device recess.

73. (New) The apparatus of claim 70, wherein the microfluidic device recess comprises a first detent and a second locking detent along the circumference of the recess, each of the detents spaced apart along the length of the recess.

74. (New) The apparatus of claim 73, wherein the disposable containers each include a closure and wherein distance between the first detent and the second detent allows for insertion of the disposable container into the recess and engagement of the first detent without opening of the disposable container closure.

75. (New) The apparatus of claim 74, wherein the second detent engages the disposable container in liquid-tight engagement.

76. (New) The apparatus of claim 75, wherein upon engagement of the second detent with the disposable container, the disposable container closure is opened.

77. (New) The apparatus of claim 60, wherein liquid is pre-stored in the microfluidic device channel.

78. (New) The apparatus of claim 60, wherein the apparatus is automated.

79. (New) A method for processing molecules, the method comprising:

- (a) providing at least first and second disposable containers, each of which comprises a cylinder with a plunger guided displaceably therein;
- (b) providing a microfluidic device having at least one channel;
- (c) operatively engaging the disposable containers to the microfluidic device; and
- (d) displacing at least one of the plungers so that a liquid is conveyed from at least one of the disposable containers into the channel.

80. (New) The method of claim 79, wherein the liquid is conveyed from the first disposable container into the second disposable container.

81. (New) The method of claim 81, wherein as one of the disposable containers is being filled, the receiving container plunger is displaced by the pressure of the liquid.

82. (New) The method of claim 79, wherein the liquid is displaced from at least one of the disposable containers into at least one microfluidic device chamber selected from the group consisting of a section of the channel, a microfluidic mixing chamber, a microfluidic reaction chamber, a microfluidic detection chamber, a bubble trap chamber, and any combination thereof.

83. (New) The method of claim 82, wherein the channel section is meandering.

84. (New) The method of claim 79, further comprising controlling the movement of liquid in the channel by opening and closing one or more valves in accordance with a predetermined program.

85. (New) The method of claim 79, further comprising operatively connecting the disposable container to the microfluidic device using a recess operatively associated with the microfluidic device.

86. (New) The method of claim 85, further comprising displacing the disposable container in the recess into a first locking position in a liquid tight relationship.

87. (New) The method of claim 86, wherein the disposable containers are operatively engaged by the microfluidic device connection to permit fluid to flow from the container into the microfluidic device.

88. (New) The method of claim 79, wherein the method is automated.